

## WHAT IS CLAIMED IS:

1. An electrical connector for aircraft fuel pumps, comprising:  
a cup-shaped connector shell, having opposing first and second ends, the first end being closed and the second end being open, and an outer radial connector flange at the first end;

5 an insulating plug mounted in the first end of said cup-shaped connector shell;

a plurality of tubular risers mounted to said glass insulating plug at said first end of said connector shell, each having a portion extending from said first end of said connector shell;

10 a plurality of connector pins mounted in said insulating plug and extending longitudinally through corresponding ones of said plurality of tubular risers, through said connector shell, and each having a portion extending from said corresponding tubular risers at the first end of said connector shell; and

15 a plurality of electrical cables connected to corresponding ones of said plurality of connector pins, respectively.

2. The electrical connector of Claim 1, further comprising:

at least one outer layer of insulating tubing covering at least a portion of at least one of said risers extending from said first end of said connector shell, a corresponding one of said portion of said connector pins extending from said corresponding tubular risers at the first end of the connector shell, and a corresponding one of said plurality of electrical cables.

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3. The electrical connector of Claim 1, wherein said cup-shaped connector shell comprises a one piece connector shell.

4. The electrical connector of Claim 1, wherein said cup-shaped connector shell is formed from a corrosion resistant metal.

5. The electrical connector of Claim 1, wherein said cup-shaped connector shell is formed from stainless steel.

6. The electrical connector of Claim 1, wherein said cup-shaped connector shell is formed from corrosion resistant steel.

7. The electrical connector of Claim 1, wherein said cup-shaped connector shell is configured to increase the distance between connector pins and grounded portions of the shell to thus increase the electrical current leak path length to prevent arcing from occurring.

8. The electrical connector of Claim 1, wherein said insulating plug forms a hermetic seal of the first end of said cup-shaped connector shell.

9. The electrical connector of Claim 1, wherein said plurality of tubular risers are formed from an electrically insulating ceramic material.

10. The electrical connector of Claim 1, wherein each of said connector pins comprises a solder cup at said first end of said connector shell for receiving a corresponding electrical cable.

11. The electrical connector of Claim 2, wherein said at least one outer layer of insulating tubing comprises heat shrunk tubing.

12. The electrical connector of Claim 11, wherein said at least one

outer layer of insulating tubing comprises cross-linked fluoropolymer tubing.

13. The electrical connector of Claim 1, wherein said insulating plug is made of glass.

14. The electrical connector of Claim 11, wherein said at least one outer layer of insulating tubing comprises two layers of heat shrunk tubing.

15. The electrical connector of Claim 1, further comprising at least one insulating tubular extension disposed over said at least one outer layer of insulating tubing, said corresponding one of at least one of said risers extending from said first end of said connector shell, said corresponding one of said portion of said connector pins extending from said corresponding tubular risers at the first end of the connector shell , and said corresponding one of said plurality of electrical cables.

16. An electrical connector for aircraft fuel pumps, comprising:  
a unitary cup-shaped connector shell, having opposing first and second ends, the first end being closed and the second end being open, and an outer radial connector flange at the first end;

5 an insulating plug mounted in the first end of said cup-shaped connector shell;

a plurality of tubular risers mounted to said glass insulating plug at said first end of said connector shell and each having a portion extending from said first end of said connector shell;

10 a plurality of connector pins mounted in said insulating plug and extending longitudinally through corresponding ones of said plurality of tubular risers, through said connector shell, and each having a portion extending from

said corresponding tubular risers at the first end of said connector shell;

- 15       a plurality of electrical cables connected to corresponding ones of  
said plurality of connector pins, respectively.

17. The electrical connector of Claim 16, further comprising:  
at least one outer layer of insulating tubing covering at least a  
portion of at least one of said risers extending from said first end of said  
20       connector shell, a corresponding one of said portion of said connector pins  
extending from said corresponding tubular risers at the first end of the connector  
shell , and a corresponding one of said plurality of electrical cables.

18. The electrical connector of Claim 16, wherein said cup-shaped  
connector shell is formed from a corrosion resistant metal.

19. The electrical connector of Claim 16, wherein said cup-shaped  
connector shell is configured to increase the distance between connector pins and  
grounded portions of the shell to thus increase the length of any potential  
electrical current leak path that could cause arcing.

20. The electrical connector of Claim 16, wherein said insulating  
plug is formed of glass and forms a hermetic seal of the first end of said cup-  
shaped connector shell.

21. The electrical connector of Claim 16, wherein said plurality of  
tubular risers are formed from an electrically insulating ceramic material.

22. The electrical connector of Claim 16, wherein said at least one  
outer layer of insulating tubing comprises heat shrunk tubing.

23. The electrical connector of Claim 16, further comprising at least one insulating tubular extension disposed over said at least one outer layer of insulating tubing, said corresponding one of at least one of said risers extending from said first end of said connector shell, said corresponding one of said portion of said connector pins extending from said corresponding tubular risers at the first end of the connector shell , and said corresponding one of said plurality of electrical cables.